were published in peer-reviewed journals. Search was conducted using generic names of the drugs and the phrase "cost effectiveness" in abstract of the published study. **RESULTS:** During 2003-2008, the number of published studies on "cost effectiveness" have increased by more than 30%. There is a large variability in CERs for same drugs for different indications, in some cases also varying by biomarkers. Primary care drugs had lower and less variable CERs than specialty drugs. Variations also exist in methodology used by different groups in modeling cost effectiveness, especially for time horizon and comparator. Majority of primary care drugs were modeled for a time horizon of 35-40 years or lifetime to demonstrate cost effectiveness. **CONCLUSIONS:** This analysis shows the range, variability and methods used for calculation of ICER values for these high budget impact drugs and provides lessons for executives and policy makers.

PRS18

THE COST-EFFECTIVENESS OF ROFLUMILAST IN THE MANAGEMENT OF SEVERE COPD IN THE UK SETTING

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OBJECTIVES: Despite availability of current treatments, patients with chronic obstructive pulmonary disease (COPD), associated with chronic bronchitis, often experience frequent (life-threatening and costly) exacerbations in UK clinical practice. The aim of this analysis was to estimate the long-term costs and health outcomes associated with the use of roflumilast in the maintenance treatment of severe COPD in the UK setting. **METHODS:** A Markov model was constructed to simulate the decline of patients through stages of COPD (as defined by the GOLD guidelines) and death. Transition probabilities were derived from published epidemiological sources. Community- and hospital-treated exacerbations were modeled as events within each health-state. Analysis was conducted for roflumilast in different positions within the care pathway: replacing LABA/ICS as an add-on to LAMA; replacing LAMA as an add-on to LABA/ICS, and; add-on to triple therapy (LAMA+LABA/ICS) vs. placebo. Relative rate ratios of exacerbations for therapeutic regimens were derived from an independently-conducted mixed treatment comparison. Direct costs, health state utilities and exacerbation disutilities were sourced from UK costs and the published literature. Analyses were conducted from the UK NHS perspective, based on a 30-year time horizon, with costs and outcomes discounted at 3% p.a. One-way and probabilistic sensitivity analyses were conducted. **RESULTS:** At monthly cost of £38.23, replacement of LABA/ICS with roflumilast was shown to be a dominant strategy, projected to improve quality-adjusted life expectancy by 0.104 QALYs, and reduce total costs by £400. Replacement of LAMA with roflumilast yielded an ICER of £6,854/QALY; adding roflumilast onto triple therapy yielded an ICER of £24,603/QALY. Results were sensitive to the cost of hospital-treated exacerbations, relative rates of exacerbation and drug costs. **CONCLUSIONS:** Roflumilast may represent a cost-effective treatment option in the UK, when used as either an add-on to, or replacement for existing agents, in the management of severe COPD patients.

PRS19

COST-UTILITY OF VARENICLINE VERSUS INTERVENTIONS AVAILABLE FOR QUITTING SMOKING IN PANAMA USING THE BENESCO MODEL

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OBJECTIVES: In Panama, between 13.5-16.5% of all deaths are associated to tobacco consumption. The Ministry of Health (MoH) determined that tobacco use is associated to seven of the leading causes of death in the country. The aim of this study was to estimate the incremental cost–utility ratios for varenicline compared to bupropion, nicotine replacement therapy (NRT) and unaided cessation for quitting smoking using a time-horizon of 20 years from an institutional perspective. **METHODS:** The Benefits of Smoking Cessation on Outcomes(BENESCO) simulation model was used for an adult cohort of subjects (n=2,249,676). BENESCO model contains projected outcomes for cardiovascular diseases, chronic obstructive pulmonary disease, lung cancer and stroke. The smoking cessation therapies evaluated were: varenicline (0.5–2 mg/day) versus bupropion (300 mg/day), NRT (5-10 mg/day) and unaided cessation. Effectiveness and utility measures were collected from published literature. Unit costs and resource use used data was gathered from the Panama's MoH(2009). Costs (expressed in 2009US$) and health outcomes were discounted at 3%. Probabilistic sensitivity analyses (PSA) were conducted. **RESULTS:** Smoking cessation efficacy rates were: 22.5%; 15.7%; NRT 13.7% and 5.9% for varenicline, bupropion, NRT and unaided cessation, respectively. After 20 years, varenicline exhibited the highest number of QALYs gained (2,144,323) against bupropion (−1,717 QALYs); NRT (−2,222 QALYs) and unaided cessation (−4,191 QALYs). QALYs differences showed to be meaningful in the healthcare system. Costs showed varenicline is the least expensive alternative with US$311,795,928 less than NRT and US$240,956,600 less than bupropion. Varenicline dominated all smoking cessation strategies. PSA support previous findings. Acceptability curves showed that varenicline would be cost-effective within <3 GDP per capita threshold. **CONCLUSIONS:** Results suggest that varenicline would be the cost-saving treatment. In Panama, the government is responsible by law to develop smoking cessation programs, thus varenicline could be helpful to enhance cost-containment policies and improve Panama health-outcomes.

PRS20

A COST-UTILITY ANALYSIS ON THE USE OF INDACATEROL FOR THE TREATMENT OF CHRONIC OBSTRUCTIVE PULMONARY DISEASE IN MEXICO

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OBJECTIVES: Chronic Obstructive Pulmonary Disease (COPD) has a huge impact on the quality of life (QOL) of patients, diminishing significantly their ability to work and their social activity. The objective of this study was to examine if the recently available treatment for COPD, indacaterol, improved the QOL more cost-effectively than the therapeutic alternatives already available. **METHODS:** A cost-utility analysis was performed from an institutional perspective (Mexican Institute of Social Security, IMSS). The comparators used were salmeterol and tiotropium, both alternatives available within the National Formulary and recommended by the National Treatment Guidelines for COPD; dosage regimens compared were indacaterol 300 μg vs. tiotropium 18 μg, and indacaterol 150 μg vs. salmeterol 50 μg. QOL data was taken from published literature; the parameter used was health-related (HR) QOL score using St. George's Respiratory Questionnaire (SGRQ). Resource use data was obtained from the institution; total direct costs of physician consults, lab and image tests, hospitalization and emergency room visits, and treatments were considered. The source of the unit costs was the institution, current for 2010. All costs are expressed in local currency (Mexican Pesos, MXP). The time horizon was less than 1 year; no discount rate was used. The analytical tool used to build the model was a decision tree. A probabilistic sensitivity analysis was performed through a Monte Carlo simulation with 100,000 iterations to confirm the robustness of the model. **RESULTS:** The results show a cost-utility ratio of $302 MXP for indacaterol, compared to $317 MXP for tiotropium. Likewise, a cost-utility ratio of $298 MXP for indacaterol was obtained, compared to $321 MXP for salmeterol, corroborating that indacaterol is a more cost-effective alternative (dominant) for the treatment of COPD. **CONCLUSIONS:** From an institutional perspective in Mexico, indacaterol improves QOL more cost-effectively (dominant) than either tiotropium or salmeterol for the treatment of COPD.

PRS21

RESOURCE USE AND COSTS OF EXACERBATION MANAGEMENT OF CHRONIC OBSTRUTIVE PULMONARY DISEASE PATIENTS UNDER THE PRIVATE HEALTHCARE SYSTEM IN BRAZIL: ROLE OF MAINTENANCE TREATMENT IN THE EXACERBATION PREVENTION IN SEVERE PATIENTS

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OBJECTIVES: Chronic obstructive pulmonary disease (COPD) is a degenerative condition with symptoms, disability and impaired quality of life that according to PLATINO study has 15% of prevalence in the population over 40 years-old in Brazil with airflow obstruction who previously diagnosed with chronic bronchitis or emphysema. This study was designed to raise the resource use and economic impact of the exacerbation from COPD under the private healthcare system and the importance of maintenance treatment avoiding exacerbation. **METHODS:** A modified Delphi panel was conducted with specialist in COPD management to capture the clinical practice and use of resources to non severe and severe exacerbation treatment. Exacerbation reduction from maintenance treatment with tiotropium was taken from literature. Only direct medical costs were taken. For physician fees, procedure reimbursement, inpatient costs and drug costs were gathered from public lists (CBHPM 5th, Kairos, PHROASA) that are the base for negotiations between providers and payers. The Brazilian guideline for economic evaluation was followed to guarantee the methodological robustness (Vianna, 2008). Discounts were not applied for the time horizon of 1 year. **RESULTS:** For each non severe exacerbations the total cost was R$ 413 (physician fees for emergency, ambulatory care and consults in the hospital was R$ 180, R$ 210 for drugs and R$ 23 for oxygen therapy) and for severe cases total cost was R$ 5,221 per patient (average LOS of 11 and cost of R$ 2,228, physician fees for consults R$ 581, R$ 483 for exams and R$ 2583 for drugs and R$ 228 for oxygen therapy). Considering the incorporation of tiotropium in the maintenance phase, a reduction of up to 25% in the average exacerbation costs compared with the usual care of R$ 1,831. **CONCLUSIONS:** Tiotropium showed potential to reduce the economical burden of COPD due to exacerbation's reduction and delay.

Respiratory-Related Disorders – Patient-Reported Outcomes & Preference-Based Studies

PRS22

COPD MAINTENANCE MEDICATION ADHERENCE: INFLUENCE ON HOSPITALIZATION AND SPENDING IN A MEDICARE POPULATION

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OBJECTIVES: This study examines the influence of medication-taking behaviors on hospitalization and spending among Medicare beneficiaries with chronic obstructive pulmonary disease (COPD). **METHODS:** Our cohort was a random 5% national sample of Medicare beneficiaries with COPD enrolled in stand-alone Medicare Part D plans (PDPs) in 2006 and 2007 who used COPD maintenance medications (n=43,666). We conducted a retrospective cross-sectional analysis of the association of COPD maintenance medication discontinuation (1/0) and adherence (Medication Possession Ratio measured as low [MPR≤0.20], moderate [MPR 0.3-0.7] or high [MPR≥0.80] on all-cause hospitalization and total, Medicare Part A, B, and D spending. COPD diagnosis was assessed using ICD-9-CM codes (491.xx, 492.xx, 496.xx) in inpatient and outpatient administrative claims from January 1, 2006 to June 30, 2006 (baseline). We examined outcomes for 18 months from July 1, 2006-December 31, 2007. Maintenance medications recommended for the management of COPD included inhaled corticosteroids (alone or in combination with long-acting β_2–agonists), anticholinergics, and methylxanthines. Logistic regression analysis was used to estimate any hospitalization and ordinary least squares regression to